

Classifications of Costs, Costing Systems, and Business Combinations

Overview of Cost Classifications

Cost classifications categorize costs based on their behavior, purpose, or traceability to provide insights for decision-making, budgeting, and performance evaluation.

- **Definition:** Costs are resources sacrificed to achieve an objective, while expenses are costs charged against revenue in a specific accounting period.
- **Purpose:** Proper classification supports accurate financial reporting, cost control, and strategic decision-making.

Cost vs. Expense

- **Cost:** Resources given up to achieve an objective (e.g., purchasing raw materials).
- **Expense:** Costs recognized in the income statement during a specific period (e.g., cost of goods sold, rent expense).
- **Key Difference:** Not all costs become expenses (e.g., capital expenditures are capitalized, not expensed immediately).

Implicit Costs

- **Definition:** Non-monetary costs, such as opportunity costs, representing the value of resources foregone (e.g., income lost by using owned equipment instead of renting it out).
- **Accounting Treatment:** Not recorded in financial statements but considered in managerial decision-making.
- **Example:** Choosing to use a company-owned warehouse instead of leasing it out for \$10,000/month incurs an implicit cost of \$10,000.

Direct vs. Indirect Costs

- **Direct Costs:** Traceable to a specific cost object (e.g., product, department).
 - Example: Raw materials used in a specific product.
- **Indirect Costs:** Cannot be directly traced to a cost object; allocated based on a cost driver.
 - Example: Factory rent allocated across multiple products.

Costs Based on Production Level

1. Variable Costs:

- Incurred only when production occurs (e.g., direct materials, direct labor).
- Per-unit cost remains constant; total cost varies with production volume.
- Formula:
[
 $\text{Total Variable Cost} = \text{Variable Cost per Unit} \times \text{Units Produced}$
]
- Example: \$5/unit for materials; 100 units = \$500 total.

2. Fixed Costs:

- Remain constant within the relevant range, regardless of production volume.
- Per-unit cost decreases as production increases.
- Example: Factory rent of \$10,000/month remains fixed; per-unit cost is \$100 at 100 units, \$50 at 200 units.

3. Mixed Costs:

- Contain both fixed and variable components.
- **Semi-Variable Costs:** Small fixed base plus a variable rate (e.g., utility bill with a base fee + usage charge).
- **Semi-Fixed Costs:** Fixed within a range, then jump to a higher fixed level (e.g., equipment leasing costs that increase at higher production levels).
- Formula:
[
 $Y = F + V \times X$
]
 - (Y): Total cost
 - (F): Fixed cost
 - (V): Variable cost per unit
 - (X): Units produced
- Example: A delivery truck has a fixed cost of \$1,000/month plus \$2/mile driven.

Product vs. Period Costs

• Product Costs (Inventoriable Costs):

- Directly related to production; capitalized in inventory until sold.
- Include:
 - **Direct Materials (DM):** Raw materials used in production.
 - **Direct Labor (DL):** Labor directly involved in production.
 - **Manufacturing Overhead (OH):** Indirect costs (e.g., factory utilities, depreciation).
- **Groupings:**
 - **Prime Costs** = DM + DL
 - **Manufacturing Costs** = Prime Costs + Manufacturing OH
- Example: Steel, wages of assembly workers, and factory rent for a car manufacturer.

• Period Costs:

- Non-production costs expensed in the period incurred.
- Include selling, general, and administrative expenses (e.g., marketing, office rent).
- For internal decision-making, may be allocated to production departments.
- Example: Sales commissions, executive salaries.

Other Cost Terms

- **Explicit Costs:** Monetary costs recorded in accounting records (e.g., wages paid).
- **Implicit Costs:** Non-monetary opportunity costs (e.g., forgone rent from owned property).
- **Opportunity Cost:** The value of the next best alternative forgone (e.g., using a machine internally instead of selling it).

Cost of Goods Sold (COGS)

- **Formula:**
[

$$\text{COGS} = \text{Beginning Finished Goods Inventory} + \text{Cost of Goods Manufactured} - \text{Ending Finished Goods Inventory}$$

]
- For resellers, replace Cost of Goods Manufactured with Purchases.
- **Example:**
 - Beginning Inventory: \$20,000
 - Cost of Goods Manufactured: \$100,000
 - Ending Inventory: \$15,000
 - $\text{COGS} = (20,000 + 100,000 - 15,000 = \$105,000)$

Cost of Goods Manufactured (COGM)

- **Definition:** The cost of units completed and transferred from work-in-process (WIP) to finished goods during a period.
- **Formula:**
[

$$\text{COGM} = \text{Direct Materials Used} + \text{Direct Labor Used} + \text{Manufacturing Overhead Applied}$$

]
- **Example:**
 - Direct Materials: \$40,000
 - Direct Labor: \$30,000
 - Manufacturing OH Applied: \$20,000
 - $\text{COGM} = (40,000 + 30,000 + 20,000 = \$90,000)$

Costing Systems

Costing systems accumulate, classify, and assign costs to products, jobs, or services. They involve three key choices:

1. **Cost Measurement Method:** How costs are assigned to units (e.g., standard, normal, actual).
2. **Cost Accumulation Method:** How costs are grouped (e.g., job costing, process costing).
3. **Overhead Allocation Method:** How overhead is allocated (e.g., volume-based, activity-based).

1. Cost Measurement Systems

These systems determine how direct and indirect costs are allocated to products.

- **A. Standard Costing:**
 - Uses predetermined standard costs for DM, DL, and OH based on planned inputs and rates.
 - Overhead is allocated using a predetermined OH rate:
[

$$\text{Predetermined OH Rate} = \frac{\text{Budgeted OH Cost}}{\text{Budgeted Activity Level}}$$

]
 - Emphasizes flexible budgeting and variance analysis (over/under-applied OH).
 - **Benefits:** Simplifies budgeting, supports variance analysis for cost control.
 - **Limitations:** Requires accurate standards; variances may be complex to analyze.
- **B. Normal Costing:**
 - Applies actual DM and DL costs (actual rates × actual quantities).
 - Overhead is applied using a predetermined annual OH rate multiplied by actual activity (e.g., machine hours).
 - **Benefits:** Reduces monthly cost fluctuations, suitable for job costing.
 - **Limitations:** Less precise than standard costing for variance analysis.
- **C. Extended Normal Costing:**
 - Uses estimated (normal) rates for DM and DL (not actual rates) multiplied by actual quantities.
 - Overhead applied as in normal costing (predetermined rate × actual activity).
 - Common in service industries where actual labor costs (e.g., bonuses) are hard to track timely.
 - **Benefits:** Timely cost allocation in dynamic environments.
 - **Limitations:** Estimates may reduce accuracy.

- **D. Actual Costing:**
 - Uses actual costs for DM, DL, and OH (actual rates × actual quantities).
 - **Benefits:** Reflects true costs, no need for standards.
 - **Limitations:** Cost per unit fluctuates, leading to potential pricing or decision errors; rarely used due to volatility.

2. Cost Accumulation Systems

- **A. Process Costing:**
 - Used for mass production of identical or similar units (e.g., chemicals, food).
 - Costs are accumulated by department or process; per-unit cost is the average:

$$\text{Cost per Unit} = \frac{\text{Total Accumulated Costs}}{\text{Number of Units}}$$
 - **Example:** Beverage company accumulating costs for bottling process.
- **B. Job Order Costing:**
 - Used for unique, identifiable products or services (e.g., custom furniture, consulting).
 - Costs are accumulated by job or project based on actual resource usage.
 - Common in service industries (e.g., law firms, hospitals) and custom manufacturing.
- **C. Operation Costing:**
 - Hybrid system for products with similar conversion processes but different materials.
 - DM costs are assigned by job; DL and OH are allocated by process.
 - Example: Apparel manufacturing with varied fabrics but similar sewing processes.

3. Overhead Allocation Methods

- **A. Volume-Based Methods:**
 - Allocate OH based on a single cost driver (e.g., machine hours, direct labor hours).
 - **Cost Driver:** An activity or event causing costs (e.g., machine hours drive maintenance costs).
 - **Limitations:** Assumes uniform OH consumption, which may distort costs for complex products.
- **B. Activity-Based Costing (ABC):**
 - Allocates OH using multiple cost drivers (volume-based and non-volume-based, e.g., setups, inspections).
 - Improves accuracy by reflecting resource consumption more precisely.
 - **Example:** Allocating setup costs based on number of setups rather than units produced.

Example: Costing Systems Comparison

- **Scenario:** XYZ Co. produces 1,000 units. Data:
 - ****Actual**